Design accessory for monitoring the indoor air quality

March 2 2016

VTT Technical Research Centre of Finland has developed a design accessory for monitoring the indoor air quality in facilities such as offices and classrooms. It detects carbon dioxide, temperature and humidity, and uses light signals to quide people to healthy space.

The monitor resembles a sailing boat, and it is ideal for facilities where staff welfare and productivity are especially important. The sensor can also be programmed to detect other gases, movement, sound, and the amount of light.

The monitor, which is based on IoT technology, uses comfort light signals to quide people if, for example, carbon dioxide levels in a room become too high. LEDs of different colours indicate when the level of gas measured by the sensor exceeds a certain threshold.

'The light changes from green to amber to red as the level of gas increases, and vice versa when it drops', explains Senior Scientist Markus Tuomikoski from VTT.

VTT's Tiny Node platform can also be used to monitor the indoor air quality remotely and to communicate with other similar IoT devices.

The sensor inside the device is based on infrared radiation at wavelengths that many gases (such as carbon dioxide) and volatile organic compounds (VOC) absorb.

Users can access the data transmitted by the device using their mobile phones. The device can also be linked to cloud services and used, for example, to collect and send regular carbon dioxide readings to the cloud, where the data can be analysed.

The indoor air monitor combines elements of VTT's sensor, LEDs, and wireless communication technology. The hybrid integration technology makes the product cost-effective to manufacture on an industrial scale.

Provided by VTT Technical Research Centre of Finland